

International General Certificate of Secondary Education
UNIVERSITY OF CAMBRIDGE LOCAL EXAMINATIONS SYNDICATE
PHYSICS **0625/5**
PAPER 5 Practical Test
CONFIDENTIAL INSTRUCTIONS
MAY/JUNE SESSION 2001 1 hour 15 minutes

Great care should be taken that this confidential information does not reach the candidates either directly or indirectly.

Instructions for preparing apparatus

The teacher responsible for preparing the examination is **not** allowed to consult the question paper before the examination. Teachers should, as a part of the preparation of the examination requirements, perform the tests indicated on pages 3 – 6 in order to satisfy themselves that the supplied materials are satisfactory.

N.B. The candidates will be instructed not to write out a detailed description of the apparatus; instead, the Supervisor or teacher responsible is asked to give (and attach to the Report form printed on pages 7 and 8) a *brief* description of the apparatus supplied, mentioning any points which are likely to be of importance to the Examiner in marking the answers. The Supervisor should also report any assistance given to candidates under the regulations explained on page 2. All reports should be signed by the Supervisor and by the person responsible for preparing the apparatus.

In addition to the usual equipment of a physics laboratory, each candidate will require the apparatus specified on pages 3 – 6. If a candidate breaks any of the apparatus, or loses any of the material supplied, the matter should be rectified and a note made in the Report.

If you have any problems or queries regarding these Instructions, please contact CIE

by e-mail: International@ucles.org.uk,

by phone: +44 1223 553554,

by fax: +44 1223 553558,

stating the Centre number, the nature of the query and the syllabus number quoted above.

These instructions consist of 8 printed pages.

Instructions for the Practical Physics Supervisor

A *Assistance to Candidates*

The purpose of the Practical Physics test is to find out whether the candidates can carry out simple practical work themselves. The Examiners are aware that candidates may sometimes be unable to show their practical ability through failure to understand some point in the theory of the experiment. If an Examiner were present in the laboratory, he would be willing to give help to enable such a candidate to get on with an experiment. In the same way, Supervisors are asked to co-operate with the Examiners by being ready to give (or allow the Physics teacher to give) help to any candidate who is unable to proceed.

The following regulations must be strictly adhered to.

- (i) No hint may be announced to the candidates as a whole.
- (ii) A candidate who is unable to proceed and requires assistance must come up to the Supervisor and state the difficulty. Candidates should be told that the Examiners will be informed of any assistance given in this way.
- (iii) A report must be made of any assistance given to the candidates, with the name and index number of the candidate.

It is suggested that the following announcement be made to the candidates.

'The Examiners do not want you to waste time through inability to get on with an experiment. Any candidate, therefore, who is unable to get on with the experiment after spending 5 minutes at it, may come to me and ask for help. I shall report to the Examiners any help given in this way, and some marks may be lost for the help given. You may ask me for additional apparatus which you think would improve the accuracy of your experiments, and you should say, on your script, how you use any such apparatus supplied.'

B *Number of sets of apparatus*

As a *minimum*, the number of sets of apparatus provided should be $N/4$, where N is the number of candidates (per session): a few spare sets should, preferably, be available to avoid any candidate being delayed when moving to another question.

Centres may find it more convenient and easier to administer if $N/3$ sets (plus one or two 'spares') of apparatus are provided.

The order in which a given candidate attempts the four questions is immaterial.

1 *Items to be supplied by the Centre (per set of apparatus unless otherwise specified)*

- (i) Straight plastic drinking straw *per candidate* (see Note 1 below)
- (ii) 10 cm³ or 25 cm³ measuring cylinder (do not supply another size; see Notes 2 & 3 below)
- (iii) Beaker containing cold water to a depth of at least 50 mm
- (iv) Rule capable of measuring length of the straw to an accuracy of 1 mm. Candidates may use their own
- (v) 200 mm of thread (which should not stretch unduly)

Notes:

- 1 The drinking straw must have a mark, 45 mm from one end, drawn on it with waterproof ink, as shown in Fig. 1.1.
- 2 If a measuring cylinder is unavailable, use a calibrated test tube.
- 3 If the measuring cylinder is marked in ml, there should be a card to instruct candidates to give their readings in cm³.



Fig. 1.1

2 *Items to be supplied by the Centre (per set of apparatus unless otherwise specified)*

- (i) Voltage source of approximately 1.5 – 2.5 V. Where candidates are supplied with a voltage source with a variable output voltage, the voltage setting should be set by the Supervisor and fixed (e.g. taped)
- (ii) Two 2.5 V, 0.2 A lamps (one labelled 'Y', the other labelled 'Z') in suitable holders
- (iii) Ammeter capable of reading up to 1.0 A with minimum precision of 0.05 A
- (iv) Voltmeter capable of measuring the supply p.d. with a minimum precision of 0.1 V
- (v) 8 connecting leads
- (vi) Switch. (The switch can be an integral part of the power supply. In this case only 7 connecting leads are required)

Notes:

- 1 The circuit shown in Fig. 2.1 must be set up for the candidates.

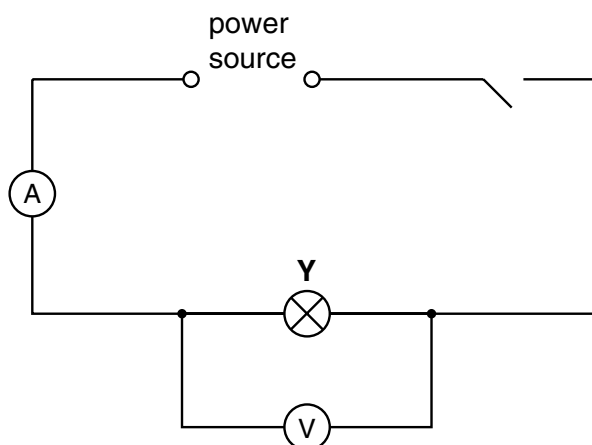


Fig. 2.1

- 2 The candidates will be required to set up the circuit shown in Fig. 2.2.

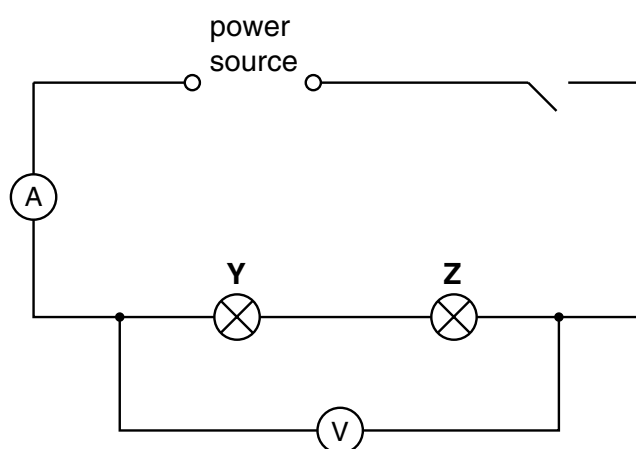


Fig. 2.2

3 *Items to be supplied by the Centre (per set of apparatus unless otherwise specified)*

- (i) Expendable steel spring, approximately 55 mm x 15 mm diameter, capable of supporting at least 600 g without overstretching
- (ii) Stand and boss
- (iii) Rod to be held in the boss
- (iv) 100 g mass hanger
- (v) 5 x 100 g slotted masses, each labelled '**1 N**'
- (vi) 300 mm rule, candidates may use their own

Notes:

- 1 Items **(i) – (iv)** are to be set up for the candidate as shown in Fig. 3.1.
- 2 Ensure that the stand is stable.

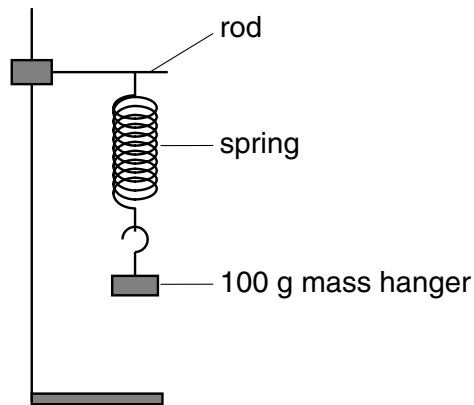


Fig. 3.1

4 *Items to be supplied by the Centre (per set of apparatus unless otherwise specified)*

- (i) Two optics pins
- (ii) Pin board, 300 mm x 210 mm or larger. A cork mat would be suitable
- (iii) 300 mm rule. Candidates may use their own
- (iv) Transparent glass or perspex block, approximately 20 x 65 x 115 mm

Note:

The transparent block is to have a strip of paper taped to one of the longer sides. The strip of paper is to have a thin straight line drawn across it on both sides. The paper is to be positioned so that the line is at the mid-point of the long side of the block and vertical, as shown in Fig. 4.1. The line must be clearly visible when viewed **through** the block.

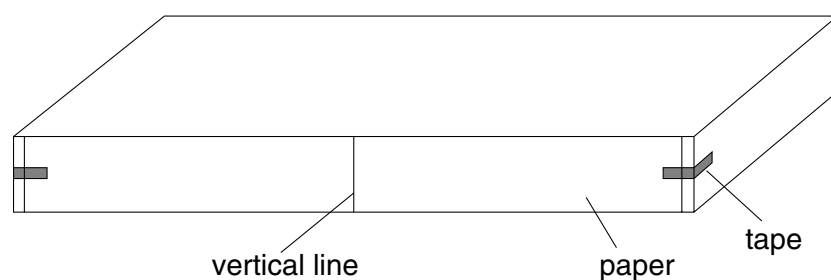


Fig. 4.1

This form must be completed and returned with the scripts.

REPORT ON PRACTICAL PHYSICS

(IGCSE MAY/JUNE 2001)

General

The Supervisor is invited to give details of any difficulties experienced by particular candidates giving their names and candidate numbers. These should include reference to:

- (a) difficulties due to faulty apparatus;
- (b) accidents to apparatus or materials;
- (c) any other information that is likely to assist the Examiner, especially if this cannot be discovered in the scripts;
- (d) any help given to a candidate.

Information required

A plan of workbenches, giving details by index number of the places occupied by the candidates for each experiment for each session, must be enclosed with the answer booklets.



Information required (cont.)

A list by name and index number of candidates requiring help, with details of the help provided.

CENTRE NO.

NAME OF CENTRE.....

Declaration (to be signed by the Supervisor and the person responsible for preparing the apparatus)

The preparation of the practical examination has been carried out so as to maintain fully the security of the examination.

SIGNED.....
Supervisor

SIGNED
Person responsible for preparing the apparatus